MATERIA MEDICA, GENERAL THERAPEUTICS, AND PHARMACY.

9. *Action of the Alkalies on the Organism.*—MM. Rabuteau and Constant presented to the French Academy of Sciences, through M. Robin, a note of some experiments made in the laboratory of the latter to ascertain the action of alkalies on the organism. During the whole period of experimenting they adhered as closely as possible to the same regimen which they had adopted some days previously.

One of them took, daily, five grammes of bicarbonate of potash, one-half of the amount at breakfast and the same at dinner, during five consecutive days. On comparing the amount of urea eliminated under the influence of this salt with that eliminated during the five preceding and the five succeeding days, it was found that the urea was at least twenty per cent. less. The number of pulsations was also diminished.

In a female who had taken, during seven days, six grammes of bicarbonate of potassa daily the urea was diminished twenty-three per cent. The pulse and temperature were also lessened. These results evidently indicate a diminution of combustion.

Finally, one of the experimenters took for six consecutive days five grammes of bicarbonate of soda daily. The diminution of urea was at times more than twenty per cent., and the beatings of the heart were rendered slower.

Further, MM. Rabuteau and Constant state that the appetite diminished so much that one of them was obliged to force himself to take the prescribed ration; and also, that marked anæmia commenced to manifest itself, especially in the female, who took in all forty-two grammes of bicarbonate of potash. This last fact, they say, proves that there was a diminution of the globules, a diminution which their previous experiments on animals had demonstrated. Finally they noticed a general debility, most marked under the action of the bicarbonate of potassa.

The experimental results they state explain a therapeutical paradox. They also explain the clinical facts differently from the hitherto admitted theory, and account for the debility caused by alkalies—

"1st. There exist a class of 'temperants,' the *refrigerentia* of Linnæus, among which are the acid fruits. But these fruits give origin to alkaline carbonates in the system; it had to be admitted that they act at first as temperants, afterwards as oxidizers. Our experiments show that these substances are temperants from the moment they enter the system until their entire elimination.

"2d. Certain essentially febrile diseases, as acute articular rheumatism, and even pneumonia, are favourably influenced by alkalies. It is known that these medicines, far from acting as stimulants in consequence of a supposed increase of oxidation, produce in these diseases a general depression—a diminution of the pulse and temperature, which coincides with our experience.

"3d. If alkalies promote oxidation they should be heroic medicines in glycosuria and in albuminuria; but alkaline waters often produce the most disastrous effects in these diseases.

"4th. The medicines which increase oxidation augment vital force. Such is common salt, which, added in excess to food, produces, according to the researches of M. Rabuteau, an increase of twenty per cent. in the urea. But alkalies produce a directly opposite effect. We may say that in many small doses they do not diminish oxidation, on the contrary appear to augment it; this we explain by their transformation into chlorides in the stomach by the action of the chlorohydric acid of the gastric juice. But then they act no longer as alkalies.

"Such are the principal results of our researches and the principal deductions which may be drawn from them. As to the explanation of the effects of the alkalies we believe it is to be found in the fact that they destroy the blood-globules, which are the carriers of oxygen, and, consequently the direct agents of oxidation."

The authors state they have nothing to add to what is already known of the effects of alkalies as lithontriptics in cases of uric acid calculi. Their action is well known. But they would protest against the opinion still held by some physicians that alkalies may be useful in all cases of calculi, even in phosphatic. "In fact," they say, "in our experiments the urine which had been generally clear under the influence of alkalies became turbid the first day after the ingestion of these medicines. This exception coincides with the statement of Wöhler, who has observed the urine under the action of alkalies deposit earthy phosphates."—*Archives Générales de Méd.*, September, 1870.

10. *On General Anæsthesia and Anæsthetics.*—Dr. B. W. RICHARDSON communicated to the Physiological Section of the British Medical Association (August, 1870), a very valuable paper on this subject. The author arranged his remarks under the following heads: 1. Enumeration of anæsthetic substances; 2. Their mode of action; 3. The best anæsthetics, with a review of their comparative advantages and disadvantages; 4. Methods of administration; 5. Methods of promoting recovery in accidents attending administration. The substances known to produce anæsthesia when inhaled, were placed together in a table, showing, with regard to each, the chemical composition, vapour-density, fluid-density, boiling point, physical and anæsthetic qualities, and the name of the first experimenter. With regard to the mode of action of anæsthetics, the chemical composition of a vapour cannot be taken to determine its narcotic property. Bodies of very different composition—*e. g.*, nitrous oxide and benzol—act as anæsthetics. Many good anæsthetics are simple hydrocarbons; but so also are combinations of hydrogen and carbon with chlorine (chloroform), of carbon with chlorine (tetrachloride of carbon); of carbon with oxygen (carbonic oxide); etc. Snow's theory, that anæsthetics act by arresting oxidation, is not absolutely tenable; because some of the anæsthetic vapour or gases support combustion, while others arrest it. Dr. Richardson had been unable to devise any satisfactory explanation of the mode in which anæsthetics act on the sensorium. He thought it probable, however, that there were two modes; that some directly interfered with the chemical changes in the blood, while others interrupted function by immediate contact with the sensorial organs. The first class he called negative, the second active substances. Of the numerous anæsthetics which have been tried, and which were enumerated in the table, the following only were of practical use: nitrous oxide, methylic ether, methyl-ethyl-ether, ethylic ether, bichloride of methylene, chloroform, tetrachloride of carbon, methylal, bichloride of ethylene, chlorethylidine, bromide of ethyl, and amylene. The relative advantages and disadvantages of each of these were noticed. In accidents arising from the administration of anæsthetics, Dr. Richardson said that there was but one known practice that could be depended on; viz., artificial respiration without moving or disturbing the body. The double-acting bellows is the best instrument for the purpose. Galvanism both exhausts the muscular respiratory power and interrupts the action of the heart.—*British Med. Journal*, Oct. 1, 1870.

11. *Influence of Digitalis on Nutrition.*—M. M. A. MEGEVAND has reported (*Gazette, Hebdom*, 12 Aug. 1870) a number of experiments instituted with a view of ascertaining the influence of digitalis on nutrition. He concludes from these that digitaline, and especially digitalis, notably diminishes the urea, and this diminution he considers to be closely connected with the slowing of the pulse of which it is the corollary, and, further, that it explains the antiphlogistic effects of the drug.

12. *Physiological Properties of Momordica Elaterium.*——Dr. KÖHLER, of Halle, has just contributed a valuable paper on the historical, chemical, and physiological properties of the juice of this plant, and we present to our readers a condensed account of the last or physiological section. The activity of the juice is dependent on the presence of elaterin, which is a chemically indifferent substance analogous to the resins, and incapable of forming salts with either acids or bases. The cause of the violent purgative action of such in-